

KNH  
File: 0642-8115US-Final/cathywan/steveschoo  
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What is claimed is:

1        1. A non-woven fabric filter for wastewater  
2        treatment with activated sludge process comprising:

3                a tubular non-woven fabric filtering portion, which  
4                has a mean pore size of 0.2  $\mu\text{m}$  to 150  $\mu\text{m}$ ;  
5                a porous tubular supporting portion disposed on  
6                inner walls of the tubular non-woven fabric  
7                filtering portion to support the non-woven  
8                fabric filtering portion; and  
9                a sealing portion for sealing two ends of the tubular  
10          non-woven fabric filtering portion and the  
11          tubular supporting portion, while leaving a  
12          hollow space in the tubular supporting portion.

1        2. The non-woven fabric filter as claimed in claim  
2        1, wherein the non-woven fabric filtering portion is  
3        planar.

1        3. The non-woven fabric filter as claimed in claim  
2        1, wherein the non-woven fabric filtering portion is  
3        folded.

1        4. The non-woven fabric filter as claimed in claim  
2        1, wherein the porous tubular supporting portion has a  
3        mean pore size of 100  $\mu\text{m}$  to 3 mm.

1        5. The non-woven fabric filter as claimed in claim  
2        1, wherein the tubular supporting portion is porous  
3        non-woven fabric.

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1       6. The non-woven fabric filter as claimed in claim  
2       1, wherein the tubular supporting portion is a porous  
3       plastic tube.

1       7. The non-woven fabric filter as claimed in claim  
2       1, wherein the sealing portion is a polymer material.

1       8. A non-woven fabric filtering module, comprising  
2       a plurality of the non-woven fabric filters as claimed in  
3       claim 1.

1       9. A process for fabricating a non-woven fabric  
2       filter, comprising the following steps:

3       providing a tubular non-woven fabric filtering  
4       portion, wherein the tubular non-woven fabric  
5       filtering portion has a mean pore size of 0.2  
6        $\mu\text{m}$  to 150  $\mu\text{m}$ ;  
7       disposing a porous tubular supporting portion on  
8       inner walls of the tubular non-woven fabric  
9       filtering portion to support the non-woven  
10      fabric filtering portion; and  
11      sealing two ends of the tubular non-woven fabric  
12      filtering portion and the tubular supporting  
13      portion with a sealing portion, while leaving  
14      a hollow space in the tubular supporting  
15      portion.

1       10. A wastewater treatment process with activated  
2       sludge process using a non-woven fabric filter,  
3       comprising the following steps:

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4           providing a wastewater treatment tank in which  
5           activated sludge and the non-woven fabric  
6           filter as claimed in claim 1 are contained;  
7           introducing wastewater containing organic material  
8           into the wastewater treatment tank, so as to  
9           allow activated sludge to decompose organic  
10          material in wastewater; and  
11          allowing the decomposed water to permeate through  
12          the non-woven fabric filter to obtain filtered  
13          water.

1           11. The wastewater treatment process with activated  
2          sludge as claimed in claim 10, wherein the step of allowing  
3          the decomposed water to permeate through the non-woven  
4          fabric filter includes allowing the decomposed water to  
5          permeate through the walls of the tubular non-woven fabric  
6          filtering portion and the porous tubular supporting  
7          portion and to permeate out from the hollow space in the  
8          tubular supporting portion.